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EXAMINER	
CHAWAN, VIJAY B	

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,192	NAGANO ET AL.	
	Examiner	**Art Unit**	
	Vijay B. Chawan	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 6, 7 and 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 13-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Based on Supreme Court precedent and recent Federal Circuit decisions, the Office's guidance to an examiner is that 35 U.S.C. 101 process **must be** (1) tied to a particular machine or apparatus or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Diamond v. Diehr, 450 U.S. 175, 184, (1981); Parker v. Flook, 437 U.S. 584 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener 94 U.S. 780, 787-88 (1876).

To qualify as a 35 U.S.C. statutory process, the claim should recite the particular machine or apparatus to which it is tied, for example by identifying the machine or apparatus that accomplishes the method steps, or positively reciting the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

There are two corollaries to the machine-or-transformation test. First, a mere field-of- use is generally insufficient to render an otherwise ineligible method claim patent-eligible. This means the machine or transformation must impose meaningful limits on the method claim's scope to pass the test. Second, insignificant extra-solution activity will not transform an unpatentable principle into a patentable process. This

means reciting a specific machine or a particular transformation of a specific article in an insignificant step, such as data gathering or outputting is not sufficient to pass the test. In the instant application, claims 13-14, fail both these tests. Also, the claims as written can be reasonably interpreted as directed to a computer program, which is not patentable under the most recent guidelines for 35 U.S.C. 101.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashino et al., "A quick search algorithm for acoustic signals using histogram features-time-series active search" Electronics & Communications in Japan, Part III – Fundamental Electronic Science, Wiley, Hoboken, NJ US, vol.84, no.12, part 03, December 2001, pages 40-47).

As per claim 1, Kashino et al., teach a detection system of a segment including a specific sound signal detects a segment including sounds similar to a reference signal that is a specific sound signal from stored signals, comprising:

a reference signal spectrogram division portion which divides a reference signal spectrogram that is a time-frequency spectrogram of the reference signal into spectrograms of small-regions that are small-region reference signal spectrograms; a

small-region reference signal spectrogram coding portion which encodes the small-region reference signal spectrogram to a reference signal small-region code; a small-region stored signal spectrogram coding portion which encodes a small-region stored signal spectrogram that is a spectrogram of a small-region in a stored signal spectrogram which is a time-frequency spectrogram of the stored signal to a stored signal small-region code; a similar small-region spectrogram detection portion which detects a small-region spectrogram similar to the small-region reference signal spectrograms respectively based on a degree of similarity of a code from the small-region stored signal spectrogram; and a degree of segment similarity calculation portion which uses a degree of small-region similarity of a small-region stored signal spectrogram similar to the small-region reference signal spectrogram in detected stored signal spectrograms and calculates a degree of similarity between the segment of the stored signal including the small-region stored signal spectrogram and the reference signal, wherein: the detection system of a segment including a specific sound signal detects the segment including a sound in the stored signals similar to the reference signal based on the degree of segment similarity (abstract, section 1, Fig.1, section 2).

As per claim 2, Kashino et al., teach the detection system of a segment including a specific sound signal according to claim 1, wherein: the small-region reference spectrogram coding portion and the small-region stored signal spectrogram coding portion use power spectrum values of each point on the small-region spectrogram as a feature vector, and calculate the reference signal small-region code and the stored

signal small-region code respectively by quantizing the feature vector (abstract, section 1, Fig.1, section 2).

As per claim 3, Kashino et al., teach the detection system of a segment including a specific sound signal according to claim 1, wherein: the small-region reference spectrogram coding portion and the small-region stored signal spectrogram coding portion respectively generate the reference signal small-region code and the stored signal small-region code by encoding a spectrum feature at each time point in the small-region spectrogram to a code, generating a histogram by counting up appearance of the code in the small-region spectrogram, generating a histogram feature that is a feature vector constructed from bin counts in the histogram, and encoding the histogram feature by vector quantization (abstract, section 1, Fig.1, section 2).

As per claim 4, Kashino et al., teach the detection system of a segment including a specific sound signal according to one of claims 1, wherein: the similar small-region spectrogram detection portion, with respect to the small-region reference signal spectrogram, compares sequentially based on the degree of small-region similarity to the small-region stored signal spectrograms of a list in which the small-region stored signal spectrograms corresponding to a frequency band of the small-region reference signal spectrogram are ordered in time-series, and detects only similar small-region stored signal spectrograms (abstract, section 1, Fig.1, section 2).

As per claim 5, Kashino et al., teach the detection system of a segment including a specific sound signal according to one of claims 1, further comprising; a table of degree of similarity among small-region codes generation function which, with respect

to the small-region codes calculated by encoding the small-region spectrogram, generates a table of degree of similarity among small-region codes by calculating degree of similarity among all small-region codes, wherein: the similar small-region spectrogram detection portion detects similarity between the small-region reference signal spectrogram and the small-region stored signal spectrogram by referring to the table of degree of similarity among small-region codes (abstract, section 1, Fig.1, section 2).

As per claim 6, Kashino et al., teach the detection system of a segment including a specific sound signal according to one of claim 5, further comprising; an index generation function which generates an index in which appearance time points in the stored signal are grouped by using the small-region codes, wherein: the similar small-region spectrogram detection portion refers to the index using the small-region code similar to the reference signal small-region code selected by referring to the table of degree of similarity among small-region codes, and detects the small-region stored spectrogram having the small-region code as the small-region stored signal spectrogram similar to the small-region reference signal spectrogram (abstract, section 1, Fig.1, section 2).

As per claim 7, Kashino et al., teach a detection method of a segment including a specific sound signal which detects a segment including sounds similar to a reference signal that is a specific sound signal from stored signals, comprising the steps of: a reference signal spectrogram division step which divides a reference signal spectrogram that is a time-frequency spectrogram of the reference signal into

spectrograms of small-regions that are small-region reference signal spectrograms; a small-region reference signal spectrogram coding step in which the small-region reference signal spectrogram is encoded to a reference signal small-region code; a small-region stored signal spectrogram coding step in which a small-region stored signal spectrogram that is a spectrogram of a small-region in a stored signal spectrogram which is a time-frequency spectrogram of the stored signal, is encoded to a stored signal small-region code; a similar small-region spectrogram detection step in which a small-region spectrogram similar to the small-region reference signal spectrograms is detected respectively from the small-region stored signal spectrogram based on a degree of similarity of a code; and a degree of segment similarity calculation step which uses a degree of small-region similarity of a small-region spectrogram similar to the small-region reference signal spectrogram in detected stored signal spectrograms and calculates a degree of similarity between the segment of the stored signal including the small-region stored signal spectrogram and the reference signal, wherein: the detection method of a segment including a specific sound signal detects the segment including a sound in the stored signals similar to the reference signal based on the degree of segment similarity (abstract, section 1, Fig.1, section 2).

As per claim 8, Kashino et al., teach the detection method of a segment including a specific sound signal according to claim 7, wherein: in the small-region reference spectrogram coding step and the small-region stored signal spectrogram coding step, power spectrum values of each point on the small-region spectrogram as a feature vector are used, and the reference signal small-region code and the stored signal small-

region code are calculated respectively by quantizing the feature vector (abstract, section 1, Fig.1, section 2).

As per claim 9, Kashino et al., teach the detection method of a segment including a specific sound signal according to claim 7, wherein: in the small-region reference spectrogram coding step and the small-region stored signal spectrogram coding step, the reference signal small-region code and the stored signal small-region code are respectively generated by encoding a spectrum feature at each time point in the small-region spectrogram to a code, generating a histogram by counting up appearance of the code in the small-region spectrogram, generating a histogram feature that is a feature vector constructed from bin counts in the histogram, and encoding the histogram feature by vector quantization (abstract, section 1, Fig.1, section 2).

As per claim 10, Kashino et al., teach the detection method of a segment including a specific sound signal according to one of claims 7, wherein: the similar small-region spectrogram detection step, with respect to the small-region reference signal spectrogram, compares sequentially based on the degree of small-region similarity to the small-region stored signal spectrograms of a list in which the small-region stored signal spectrograms corresponding to a frequency band of the small-region reference signal spectrogram are ordered in time-series, and only similar small-region stored signal spectrograms are detected (abstract, section 1, Fig.1, section 2).

As per claim 11, Kashino et al., teach the detection method of a segment including a specific sound signal according to one of claims 7, further comprising; a step which, with respect to the small-region codes calculated by encoding the small-region

spectrogram, generates a table of degree of similarity among small-region codes by calculating degree of similarity among all small-region codes, wherein: the similar small-region spectrogram detection step detects similarity between the small-region reference signal spectrogram and the small-region stored signal spectrogram by referring to the table of degree of similarity among small-region codes (abstract, section 1, Fig.1, section 2).

As per claim 12, Kashino et al., teach the detection method of a segment including a specific sound signal according to claim 11, further comprising; an index generation step which generates an index in which appearance time points in the stored signal are grouped by using the small-region codes, wherein: the similar small-region spectrogram detection method refers to the index using the small-region code similar to the reference signal small-region code selected by referring to the table of degree of similarity among small-region codes, and detects the small-region stored spectrogram having the small-region code as the small-region stored signal spectrogram similar to the small-region reference signal spectrogram (abstract, section 1, Fig.1, section 2).

As per claim 13, Kashino et al., teach the detection program of a segment including a specific sound signal operates a computer to work as the detection system of a segment including a specific sound signal according to one of claims 1 (abstract, section 1, Fig.1, section 2).

As per claim 14, Kashino et al., teach the computer readable medium storing the detection program of a segment including a specific sound signal according to claim 13 (abstract, section 1, Fig.1, section 2).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vijay B. Chawan whose telephone number is (571) 272-7601. The examiner can normally be reached on Monday Through Friday 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Vijay B. Chawan/
Primary Examiner, Art Unit 2626

vbc
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